

Species *Planktophila toyensis*

Etymology

[to.y.en'sis] **N.L. fem. adj.** *toyensis*, of Toya, named for the lake from which the organism was isolated, Lake Toya, Japan

Nomenclatural type

[Genome sc|0004094](#) ^{Is}

Description

Etymology. It is named 'toyensis' after the lake from which it was isolated, Lake Toya, Japan. Brief description. *Planktophila toyensis* ToyE-15 (ENA accession number GCA_965267865) was isolated from the epilimnion (5m depth) of the oligotrophic Lake Toya, Japan (date: 2022-09-29) and it is the only isolated representative of the species. It has a complete circular genome with a size of 1,367,129 bp, a GC content of 47.8%, and a coding density of 95.9%. It encodes one rRNA operon and 38 tRNA genes. It is distributed worldwide and in relatively high abundance, including the Delaware River and Bay (USA), Lake Toya and Inawashiro (Japan), Římov Reservoir (Czech Republic), Lake Zurich (Switzerland), and especially in boreal lakes such as Lake Eden, Paradise, Montjoie, and Nukko (Canada), Lake Odrolstjärnen and Lomtjärnam (Sweden), and Lake Lovojärvi (Finland). The closest isolated relative is *Planktophila landstejnensis* MRE-249 with which it shared an average nucleotide identity of 91.4%. It encodes for a complete pentose phosphate pathway, both an actinorhodopsin and a heliorhodopsin, and for the retinal biosynthesis pathway. It can synthesize all amino acids except asparagine. It can produce a range of vitamins, including riboflavin (B2). The Current GTDB classification (r220) is d__Bacteria;p__Actinomycetota;c__Actinomycetia;o__Nanopelagicales;f__Nanopelagicaceae;g__Planktophila;s__.

Classification

Bacteria » *Actinomycetota* » *Actinomycetes* » *Nanopelagicales* » *Nanopelagicaceae* » *Planktophila* » *Planktophila toyensis*

References

Effective publication: Chiriac et al., 2025 [1]

Registry URL

<https://seqco.de/i:51478>

References

1. Chiriac et al. (2025). Ecological success in freshwater lakes: insights from novel cultivated lineages of the abundant Nanopelagicales order. *Microbiome*. DOI: [10.1186/s40168-025-02272-x](https://doi.org/10.1186/s40168-025-02272-x)